explicitly, rather than implicitly, refer to the silicon oxide layer and the silicon nitride layer as having a "lower refraction coefficient." The remaining amendments to all but claim 19 are simply to provide appropriate antecedent basis for claim terminology used therein, and the minor nature of these amendments is believed to be self evident without further explanation. With respect to claim 19, this claim has been amended to positively recite elements of the photodiode, the precharge transistor, and the amplifier transistor prior to reciting the manner in which these elements are interconnected. In addition, the previously recited connection of the drain of the precharge transistor to the reference voltage has been amended to make it clear that this claim does not require the presence of a reference voltage source.

Attached hereto are marked-up versions of the changes made to the claims by the current amendment. The attached pages are captioned **MARKED-UP CLAIMS"**.

Claims 1-19 and 27 stand rejected over a variety of references including Kioke (U.S. Patent No. 4,242,694), Nagasaki (U.S. Patent No. 5,502,488), Motojima (U.S. Patent No. 4,996,578), Baji (U.S. Patent No. 4,407,010), Merrill (U.S. Patent Nos. 6,150,683, 5,614,744, and 6,160,282, hereinafter Merrill '683, Merill '744, and Merril '282, respectively), and Nagano (U.S. Patent No. 6,049,118). With respect to independent claims 1, 12, 17, 19, and 27, independent claims 1, 12, and 17 are rejected under 35 U.S.C. §103 over Kioke and under 35 U.S.C. §102 over Nagasaki, claim 19 is rejected under 35 U.S.C. §102 over Baji or Merrill ('683 or '282 or '744), claims 12, 17, and 27 are rejected under 35 U.S.C. §102 over Motojima, and claim 27 is rejected under 35 U.S.C. §103 over the combination of Kioke and Merrill '744. These rejections are respectfully traversed.

1. The Subject Matter of Claim 1

Claim 1 is directed to an array of photodiodes made of regions of a second conductivity type formed in a semiconductive region of a first conductivity type. The array of photodiodes is divided into three interleaved sub-arrays, all photodiodes of a same sub-array being coated with a same interference filter including at least one insulating layer of determined thickness coated with at least one conductive layer. The at least one conductive layer is electrically connected to the semiconductive region of the first conductivity type.

Claim 1 stands rejected under 35 U.S.C. §103 over Kioke and under 35 U.S.C. §102 over Nagasaki. These rejections are respectfully traversed.

A. The Rejection of Claim 1 Under 35 U.S.C. §103 Over Kioke

According to the Office Action, despite the fact that Koike does not disclose at least one conductive layer that is electrically connected to the semiconductive region of the first conductivity type as recited in claim 1, the Office Action asserts that it "would have been obvious to have the substrate 1 at ground potential and the electrodes 13 (Fig. 2) either connected to the substrate 1 or via a fixed potential (claim 2)." No support for this assertion is provided either in the Office Action or in Koike, nor does the Office Action provide any motivation for this modification. The Examiner is respectfully requested to provide some basis for this assertion or withdraw the rejection of claim 1 based thereon.

Further, even if the Office Action were to provide some basis of record for the above assertion, claim 1 still patentably distinguishes over Koike. The Office Action asserts that the "'interference filter' recited in claim 1 reads on 'silicon oxide' layer 12R, 12G, 12B and 'polysilicon' layer 13" in Fig. 2. This assertion is incorrect for a number of reasons.

Although Koike discloses a number of different embodiments of a solid state imaging device, Koike clearly discloses that the optical filter which separates the image of an object into color components is not shown in Figs. 1A, 1B, or 1D-1H, or any of Figs. 2-7. (See col. 3, lines 39-44, "Although omitted in Fig. 1A, an optical filter 1010 for separating the image of an object into respective color components (in this embodiment, the three primary colors of red, green and blue) is provided by bonding or the like on the side of the incident light 100 in this device as illustrated in Fig. 1C" (emphasis added); col. 7, lines 13-14, "In the figure [2], the optical filter is omitted from the illustration" (emphasis added); col. 7, line 54, "In the figure [3], the optical filter is omitted from the illustration" (emphasis added); col. 8, line 24, "In the figure [4], the optical filter is omitted" (emphasis added); col. 8, lines 52-53, "In Figs 5 and 6, the optical filter is omitted" (emphasis added); col. 9, lines 46-47, "In Fig. 7, the optical filter is omitted" (emphasis added).) Thus, although the Office Action asserts that the silicon oxide layers 12R, 12G, and 12B, and the polysilicon layer 13 in Fig. 2 read on the interference filter recited in claim 1, these layers clearly form no part of the optical filter described in Kioke.

Furthermore, as clearly evidenced by those passages referring to the optical filter 101 of Kioke, the optical filter described in Kioke is an absorption filter and not an interference filter. This is evidenced by the fact that the optical filter of Kioke simply "bonded or the like on the

side of the incident light" and no properties such as the thickness or refractive index of the filter material, or the layers adjacent thereto, are even addressed (see col. 3, lines 39-50). As known to those skilled in the art, an absorption filter operates by absorption of colors other than the color that is desired to be transmitted by the filter, whereas an interference filter operates by reflecting colors other than the color that is desired to be transmitted by the filter. Thus, although Kioke does disclose the use of a filter, Kioke does not disclose, teach, or suggest an interference filter as recited in claim 1.

Additionally, even if the silicon oxide layers 12R, 12G, and 12B, and the polysilicon layer 13 of Kioke were to read on the "interference filter" recited in claim 1, all of the diodes in the same sub-array of Kioke are not coated with the same interference filter that includes at least one insulating layer of determined thickness coated with at least one conductive layer as recited in claim 1. Instead, as clearly described in Kioke, after the second oxide film 3' is formed over the surface of the substrate, the conductive film 6 (Fig. 1G, but film 13 in Fig. 2) is provided on the second oxide film 3', and then the conductive "film or material is removed so as to leave its region overlying the photodiode." (Col. 6, lines 41-50.) Thus, as illustrated in Figs. 1, 1G, 1H, and Figs. 2-6 of Kioke, the photodiodes of the same sub-array are not coated with the same interference filter, as the conductive films 6, 13, 14, 15, 16, 23, and 25 of Kioke are unique to each photodiode.

Accordingly, because Kioke does not disclose, teach, or suggest all the limitations recited in claim 1, and because the Office Action provides no support or motivation for the asserted modification of Kioke, the rejection of claim 1 under 35 U.S.C. §103 over Kioke should be withdrawn.

B. The Rejection of Claim 1 Under 35 U.S.C. §102 Over Nagasaki

The Office Action asserts that Figure 1 of Nagasaki discloses an "interference filter" including "insulating" layer 4 and "conductive" layer 9. Applicant respectfully disagrees.

Figure 1 of Nagasaki depicts the structure of a pixel of a solid-state imaging device. The pixel includes a MOS transistor 5, a photodiode 8, and a capacitor 10 formed in a silicon substrate 1. (Col. 6, lines 14-17.) N-type source region 2 and drain region 3 are separately formed on the surface of the silicon substrate 1, and an insulating film 4 is formed on the substrate 1. (Col. 6, lines 17-21.) Gate electrode 6 for turning on/off the portion between the

source 2 and the drain 3 is formed on the insulating film 4. (Col. 6, lines 21-24.) Source region 2 and substrate 1 that are situated under the light receiving surface (a part of the upper surface of insulating film 4) comprise the photodiode 8. (Col. 6, lines 28-31.) The capacitor electrode 9 is made of polycrystalline silicone and is provided on the upper surface of the insulating film 4. (Col. 6, lines 32-35.) The capacitor electrode 9, the capacitor insulating film 4 (a part of the insulating film 4), and source region 2 comprise the capacitor 10. (Col. 6, lines 35-38.)

As clearly described in column 6, lines 14-38 of Nagasaki and illustrated in Figure 1, the region of the pixel in Nagasaki that corresponds to the photodiode 8 does not include any conductive layer formed above an insulating layer of the photodiode 8. Instead, as clearly shown and described in Nagasaki, the region that is asserted to read on the interference filter recited in claim 1 is formed above the capacitor 10. Accordingly, because Nagasaki very clearly does not disclose, teach, or suggest an array of photodiodes that includes an interference filter coating all photodiodes of a same sub-array as recited in claim 1, the rejection of claim 1 under 35 U.S.C. §102 over Nagasaki should be withdrawn.

Claims 2-11 depend either directly or indirectly from claim 1 and patentably distinguish over Kioke and Nagasaki for at least the same reasons.

2. The Subject Matter of Claim 12

Claim 12 is directed to a photodiode comprising a semiconductor substrate of a first conductivity type, a semiconductive region of a second conductivity type formed in the semiconductor substrate, and a multilayer interference filter disposed over the semiconductive region. The multilayer interference filter includes at least one insulating layer of predetermined thickness, and a conductive layer disposed over the at least one insulating layer. The conductive layer includes a conductive portion that electrically connects the conductive layer to the semiconductor substrate of the first conductivity type.

Claim 12 stands rejected under 35 U.S.C. §103 over Kioke and under 35 U.S.C. §102 over Nagasaki. Claim 12 also stands rejected under 35 U.S.C. §102 over Motojima. These rejections are respectfully traversed.

A. The Rejection of Claim 12 Under 35 U.S.C. §103 Over Kioke

As noted above with respect to the rejection of claim 1, no support for the assertion that it would have been obvious to have the substrate 1 in Fig. 2 of Kioke at ground potential and the electrodes 13 (Fig. 2) either connected to the substrate 1 or via a fixed potential (claim 2) is provided in the Office Action nor in Koike. Nor does the Office Action provide any motivation for the asserted modification. The Examiner is respectfully requested to provide some basis for this assertion or withdraw the rejection of claim 12 based thereon.

Further, claim 12 patentably distinguishes over Kioke for many of the same reasons detailed above with respect to claim 1. For example, although the Office Action asserts that the interference filter recited in claim 12 reads on silicon oxide layers 12R, 12G, 12B, and polysilicon layer 13 in Fig. 2 of Kioke, this assertion is clearly refuted by the disclosure of Kioke. Specifically, Kioke clearly states that the optical filter which separates the image of an object into color components is not shown in Figs. 1A, 1B, or 1D-1H, or any of Figs. 2-7. Thus, as clearly described in Kioke, the silicon oxide layers 12R, 12G, and 12B, and the polysilicon layer 13 clearly form no part of the optical filter described in Kioke. Moreover, as discussed above with respect to claim 1, the optical filter described in Kioke is an absorption filter and not an interference filter. Accordingly, although Kioke does disclose the use of an optical filter, Kioke does not disclose, teach, or suggest a multilayer interference filter as recited in claim 12.

Because Kioke does not disclose, teach, or suggest all the limitations recited in claim 12, and because the Office Action provides no support or motivation for the asserted modification of Kioke, the rejection of claim 12 under 35 U.S.C. §103 over Kioke should be withdrawn.

B. The Rejection of Claim 12 Under 35 U.S.C. §102 Over Nagasaki

Claim 12 also patentably distinguishes over Nagasaki for many of the same reasons discussed above with respect to claim 1. Specifically, as discussed above with respect to claim 1, the region of the pixel in Fig. 1 of Nagasaki that corresponds to the photodiode 8 does not include any conductive layer formed above an insulating layer of the photodiode 8. Instead, the region that is asserted to read on the multilayer interference filter recited in claim 12 is formed above the capacitor 10, not the photodiode. Accordingly, because Nagasaki very clearly does not disclose, teach, or suggest a photodiode that includes a multilayer interference filter that includes at least one insulating layer of predetermined thickness, and a conductive layer disposed

over the at least one insulating layer as recited in claim 12, the rejection of claim 12 under 35 U.S.C. §102 over Nagasaki should be withdrawn.

C. The Rejection of Claim 12 Under 35 U.S.C. §102 Over Motjima

Claims 12 also stands rejected under 35 U.S.C. §102 over Motojima. The Examiner asserts that Figure 5 of Motijima discloses an "'interference filter' defined by 'insulating' layer 6_2 and 'conductive' layer 4," and "the 'conductive portion' includes wiring 5a."

Motojima is generally directed to a semiconductor device including a photodetector for converting an optical signal into an electric signal. (Col. 2, lines 3-5.) The semiconductor prevents erroneous operation by light, to provide high reliability with a sufficient shielding effect maintained over the most sensitive elements. (Col. 1, line 66- col. 2, line 2.) Specifically, the photodiodes are shielded by an optically transmissible conductive film. (Col. 2, lines 16-22.) As shown in Fig. 5, wirings 5a formed on the optically transmissible conductive film 4 electrically connect to a substrate of constant potential, such as ground potential, thereby bypassing noise. (Col. 3, lines 6-10.)

Although the Office Action asserts that Motojima discloses an interference filter, no support for this assertion is provided in Motojima. Specifically, nowhere in the disclosure of Motojima is there even a mention of an "interference filter," nor any support for the assertion that insulating layer 6_2 and conductive layer 4 operate to form a multilayer interference filter as recited in claim 12. As noted above with respect to claim 1, an interference filter operates by reflecting colors other than the color that is desired to be transmitted by the filter. No such properties of the various layers 6_2 and 4, such as their thickness or their refractive index are even addressed in Motojima. Accordingly, because Motojima does not disclose, teach, or suggest a photodiode that includes a multilayer interference filter as recited in claim 12, the rejection of claim 12 under 35 U.S.C. §102 over Motojima should be withdrawn.

Claims 13-16 depend either directly or indirectly from claim 12 and patentably distinguish over Kioke, Nagasaki, and Motojima for at least the same reasons.

3. The Subject Matter of Claim 17

Claim 17 is directed to a photodiode comprising a semiconductor substrate of a first conductivity type, a semiconductive region of a second conductivity type formed in the

semiconductor substrate, and a multilayer interference filter disposed over the semiconductive region. The multilayer interference filter includes at least one insulating layer of predetermined thickness and a conductive layer disposed over the at least one insulating layer. The photodiode further comprises means defining a conductive portion that electrically connects the conductive layer to the semiconductor substrate of the first conductivity type.

Claim 17 stands rejected under 35 U.S.C. §103 over Kioke and under 35 U.S.C. §102 over Nagasaki and Motojima. These rejections are respectfully traversed.

A. The Rejection of Claim 17 Under 35 U.S.C. §103 Over Kioke

As noted above with respect to the rejection of claims 1 and 12, no support for the assertion that it would have been obvious to have the substrate 1 in Fig. 2 of Kioke at ground potential and the electrodes 13 (Fig. 2) either connected to the substrate 1 or via a fixed potential (claim 2) is provided in the Office Action or in Koike. Accordingly, the Examiner is respectfully requested to provide some basis for this assertion or withdraw the rejection of claim 17 based thereon.

Further, claim 17 patentably distinguishes over Kioke for many of the same reasons detailed above with respect to claims 1 and 12. Specifically, Kioke clearly states that the optical filter which separates the image of an object into color components is not shown in Fig. 1A, 1B, or 1D-1H, or any of Figs. 2-7. Thus, the assertion that the silicon oxide layers 12R, 12G, and 12B, and the polysilicon layer 13 form an optical filter is clearly refuted by the disclosure of Kioke. Moreover, as discussed above with respect to claims 1 and 12, the optical filter described in Kioke is an absorption filter and not an interference filter.

Accordingly, because Kioke does not disclose, teach, or suggest all the limitations recited in claim 17, and because the Office Action provides no support or motivation for the asserted modification of Kioke, the rejection of claim 17 under 35 U.S.C. §103 over Kioke should be withdrawn.

B. The Rejection of Claim 17 Under 35 U.S.C. §102 Over Nagasaki

Claim 17 also patentably distinguishes over Nagasaki for many of the same reasons discussed above with respect to claims 1 and 12. Specifically, the region of the pixel in Fig. 1 of Nagasaki that corresponds to the photodiode 8 does not include any conductive layer formed

above an insulating layer of the photodiode 8. Instead, the region that is asserted to read on the multilayer interference filter recited in claim 17 is formed above the capacitor 10, not the photodiode. Accordingly, because Nagasaki very clearly does not disclose, teach, or suggest a photodiode that includes a multilayer interference filter that includes at least one insulating layer of predetermined thickness, and a conductive layer disposed over the at least one insulating layer as recited in claim 17, the rejection of claim 17 under 35 U.S.C. §102 over Nagasaki should be withdrawn.

C. The Rejection of Claim 17 Under 35 U.S.C. §102 over Motojima

The Office Action's rejection of claim 17 over Motojima is similarly misplaced. Specifically, although the Office Action contends that Fig. 5 of Motijima discloses an "'interference filter' defined by 'insulating' layer 6_2 and 'conductive' layer 4," no support for this assertion is provided in Motojima. Indeed, nowhere in the disclosure of Motojima is there even a mention of an "interference filter," nor any support for the assertion that insulating layer 6_2 and conductive layer 4 operate to form a multilayer interference filter as recited in claim 17. Accordingly, because Motojima does not disclose, teach, or suggest a photodiode that includes a multilayer interference filter as recited in claim 17, the rejection of claim 17 under 35 U.S.C. §102 over Motojima should be withdrawn.

Claim 18 depends from claim 17 and patentably distinguish over Kioke, Nagasaki, and Motojima for at least the same reasons.

4. The Subject Matter of Claim 19

Claim 19 is directed to a photodiode circuit comprising a photodiode having a cathode, a precharge transistor having a gate, a source, and a drain, and an amplifying transistor having a gate and a source. The cathode of the photodiode is coupled to the source of the precharge transistor, the drain of the precharge transistor is connected to receive a reference voltage, and the gate of the precharge transistor is connected to a row line capable of selecting all precharge transistors of a same row. The gate of the amplifying transistor is connected to the cathode of the photodiode and the source of the amplifying transistor is connected to a column line.

Claim 19 stands rejected under 35 U.S.C. §102 over Fig. 3 of Baji or alternatively over Merrill (Fig. 1 in Merrill '683, Figs. 3A and 5 of Merrill '282, or Figs. 3 and 5 of Merrill '744).

These rejections are respectfully traversed.

A. The Rejection of Claim 19 Under 35 U.S.C. §102 Over Baji

Fig. 3 of Baji is a circuit diagram of a solid state image pickup device. (Col. 4, lines 42-43.) The cathode of the photodiode 1 is connected with the gate of an amplifying MOS transistor 20, which has its drain and source connected with a power supply 23 and the source of the transistor 2, respectively. (Col. 4, lines 43-47.) In order to return (or reset) the potential at the cathode of the photodiode 1 after the signal reading operation, there is provided a resetting transistor 24 which has its drain connected with the gate of the transistor 20, its source grounded to the earth or connected with a constant voltage power supply 25, and its gate connected with a reset control line 26. (Col. 4, lines 47-54.) Scanning circuits 9 and 10 are equivalent to those shown in FIG. 1, and the output of the vertical scanning circuit 10 is connected with the scanning line 4 and the reset control line 26 of each picture cell through a vertical scan control circuit 27. (Col. 4, lines 54-58.)

Claim 19 recites that a cathode of the photodiode is connected to the gate of an amplifying transistor and is coupled to the source of a precharge transistor. Claim 19 further recites that the gate of the precharge transistor is connected to a row line capable of selecting all precharge transistors of a same row, and the source of the amplifying transistor is connected to a column line. In contrast, although Fig. 3 of Baji shows the cathode of photodiode 1 being connected to the gate of amplifying MOS transistor 20, the cathode of the photodiode 1 is connected to the drain (not the source) of the resetting transistor 24. Further, as clearly described in Baji, the resetting transistor 24 is used to reset the potential at the cathode of the photodiode 1 after the signal reading operation, and not to select precharge transistors of a same row. Additionally, and in contrast to Applicant's invention as recited in claim 19, the source of the amplifying MOS transistor 20 in Fig. 3 of Baji is connected to the source of transistor 2, and not to a column line as recited in claim 19. Accordingly, claim 19 clearly distinguishes over Fig. 3 of Baji and the rejection of claim 19 under 35 U.S.C. §102 over Fig. 3 of Baji should be withdrawn.

B. The Rejection of Claim 19 Under 35 U.S.C. §102 Over Merrill '683, '282, and '744

Fig. 1 of Merrill '683 shows a photodiode having a cathode that is connected to the source of a reset transistor 20. As shown in Fig. 1 and described in Merrill '683, the gate of the reset transistor 20 is connected to "receive one of a plurality of reset signals RST1-RSTn." (Col. 1, lines 43-45.) As further described in Merrill '683, the cathode of the photodiode is also connected to the gate of a source-follower transistor 22, which is in turn, has its source connected to the drain of a row-select transistor 24; the row-select transistor 24 has its gate connected to receive one of a plurality of row-select signals RWSL1-RWSLn. (Col. 1, lines 46-51.)

In contrast to the photodiode circuit recited in claim 19, the gate of the reset transistor 20 in Merrill '683 is not connected to a row line capable of selecting all precharge transistors of a same row, but instead is connected to "receive one of a plurality of reset signals RST1-RSTn." In Fig. 1 of Merrill '683, it is the row-select transistor 24 that is used to select transistors of a same row. Accordingly, claim 19 distinguishes over Merrill '683 and the rejection of claim 19 under 35 U.S.C. §102 based thereon should be withdrawn.

Fig. 3A of Merrill '282 and Fig. 3 of Merrill '744 are essentially identical to the circuit illustrated in Fig. 1 of Merrill '683. In each of these figures, the gate of the transistor 302 (Merrill '282) or transistor m1 (Merrill '744) is connected to a reset line, and it is another transistor 304 (Merrill '282), m3 (Merrill '744) that is used to select transistors of a same row. Accordingly, claim 19 distinguishes over Fig. 3A of Merrill '282 and Fig. 3 of Merrill '744 and the rejections of claim 19 under 35 U.S.C. §102 based thereon should be withdrawn.

With respect to Fig. 5 in Merrill '282 and Merrill '744, Applicant fails to understand the relevance of these circuits to Applicant's invention recited in claim 19. Accordingly, the Examiner is respectfully request to explain the relevance of these figures should this rejection be maintained so that Applicant may respond thereto.

5. The Subject Matter of Claim 27

Claim 27 is directed to a photodiode comprising a semiconductor substrate of a first conductivity type, a semiconductive region of a second conductivity type formed in the semiconductor substrate, and a multilayer interference filter disposed over the semiconductive region. The multilayer interference filter includes at least one insulating layer of predetermined thickness, and a conductive layer disposed over the at least one insulating layer. The

semiconductor substrate defining a well formed in a base substrate of the second conductivity type, the conductive layer being connected to the base substrate.

Claim 27 stands rejected under 35 U.S.C. §103 over Kioke and Merrill ('744), and under 35 U.S.C. §102 over Motojima. These rejections are respectfully traversed.

A. The Rejection of Claim 27 Under U.S.C. §103 Over Kioke and Merrill '744

With respect to the rejection under §103, neither Kioke nor the Office Action provides any support of record for the asserted modification of Kioke. Moreover, as discussed above, Kioke clearly states that the silicon oxide layers 12R, 12G, 12B, and polysilicon layer 13 in Fig. 2 form no part of the optical filter 101. Moreover, the optical filter described in Kioke is an absorption filter and not a multilayer interference filter, and Merrill '744 does not cure this deficiency. Accordingly, because Kioke does not disclose, teach, or suggest all the limitations recited in claim 27, because Merrill '744 does not cure those deficiencies, and because the Office Action provides no support or motivation for the asserted modification of Kioke, the rejection of claim 27 under 35 U.S.C. §103 over Kioke in view of Merrill '744 should be withdrawn.

B. The Rejection of Claim 27 Under U.S.C. §102 Over Motojima

With respect to the rejection of claim 27 under 35 U.S.C. §102 over Motojima, Applicant has already explained that Motojima fails to disclose, teach or suggest an interference filter, let alone a multilayer interference filter as recited in claim 27. Specifically, nowhere in the disclosure of Motojima is there even a mention of an "interference filter," nor any support for the assertion that insulating layer 6_2 and conductive layer 4 operate to form a multilayer interference filter as recited in claim 27. Accordingly, because Motojima does not disclose, teach, or suggest a photodiode that includes a multilayer interference filter as recited in claim 27, the rejection of claim 27 under 35 U.S.C. §102 over Motojima should be withdrawn.

6. Newly Presented Claims 28-30

Newly presented claims 28-30 depend either directly or indirectly from claim 1 and patentably distinguish over Kioke and Nagasaki for at least the same reasons.

CONCLUSION

In view of the foregoing amendments and remarks, this application should now be in condition for allowance. A notice to this effect is respectfully requested. If the Examiner believes, after this amendment, that the application is not in condition for allowance, the Examiner is requested to call the Applicant's attorney at the number listed below.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Applicant hereby requests any necessary extension of time. If there is a fee occasioned by this response, including an extension fee, that is not covered by an enclosed check, please charge any deficiency to deposit account No. 23/2825.

Respectfully submitted,

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MARKED UP CLAIMS

1. (Amended) An array of photodiodes made of regions of a second conductivity type formed in a semiconductive region of a first conductivity type, divided into three interleaved sub-arrays, all [the] photodiodes of a same sub-array being coated with a same interference filter including at least one insulating layer of determined thickness coated with at least one conductive layer, wherein said at least one conductive [layers are] layer is electrically connected to the semiconductive region of [a] the first conductivity type.

4. (Amended) The array of photodiodes of claim 1, wherein the semiconductive region of [a] the first conductivity type comprises a semiconductor substrate made of single-crystal silicon.

8. (Amended) The array of photodiodes of claim 1, wherein said semiconductive region of the first conductivity type comprises a semiconductor substrate made of single-crystal silicon, said at least one insulating layer comprises a silicon oxide layer, and said conductive layer comprises a polysilicon layer.

10. (Amended) The array of photodiodes of claim 9, wherein said single-crystal silicon layer and said polysilicon layer have a high refraction coefficient on the order of 4, while said silicon oxide layer and silicon nitride layer have a lower refraction coefficient, on the order of 1.5.

11. (Amended) The array of photodiodes of claim 1, wherein said conductive layer is connected to said semiconductive region of [a] the first conductivity type at a heavily doped P-type region [8] thereof.

12. (Amended) A photodiode comprising:

a semiconductor substrate of a first conductivity type;

a semiconductive region of a second conductivity type [and] formed in said semiconductor substrate;

a multilayer interference filter disposed over said semiconductive region and including;

at least one insulating layer of predetermined thickness, and

a conductive layer disposed over said at least one insulating layer,

wherein said conductive layer includes a conductive portion that electrically connects said conductive layer to said semiconductor substrate of the first conductivity type.

17. (Amended) A photodiode comprising:

a semiconductor substrate of a first conductivity type;

a semiconductive region of a second conductivity type [and] formed in said semiconductor substrate;

a multilayer interference filter disposed over said semiconductive region and including;

at least one insulating layer of predetermined thickness, and

a conductive layer disposed over said at least one insulating layer,

means defining a conductive portion that electrically connects said conductive layer to said semiconductor substrate of the first conductivity type.

19. (Amended) A photodiode circuit comprising:

a photodiode having a cathode;[,]

a [precharged] precharge transistor having a gate, a source, and a drain;[,] and

an amplifying transistor having a gate and a source;

wherein the cathode of said photodiode [having its cathode] is coupled to the source of [the] said precharge transistor, the drain of said precharge transistor [being] is connected to receive a reference voltage, and the gate of said precharge transistor is connected to a [roll] row line [meant to select] capable of selecting all [of the] precharge transistors of [the] a same row;[,] and

wherein [an amplifier transistor having its] the gate of the amplifying transistor is connected to the cathode of said photodiode and [its] the source of the amplifying transistor is connected to a column line.

27. (Amended) A photodiode comprising:

a semiconductor substrate of a first conductivity type;

a semiconductive region of a second conductivity type [and] formed in said semiconductor substrate;

a multilayer interference filter disposed over said semiconductive region and including;

at least one insulating layer of predetermined thickness, and

a conductive layer disposed over said at least one insulating layer,

said semiconductor substrate defining a well formed in a base substrate of the second conductivity type, said conductive layer being connected to said base substrate.